

20190810_BearTrap_Grave02

Processing Report

30 Oktober 2021



Survey Data

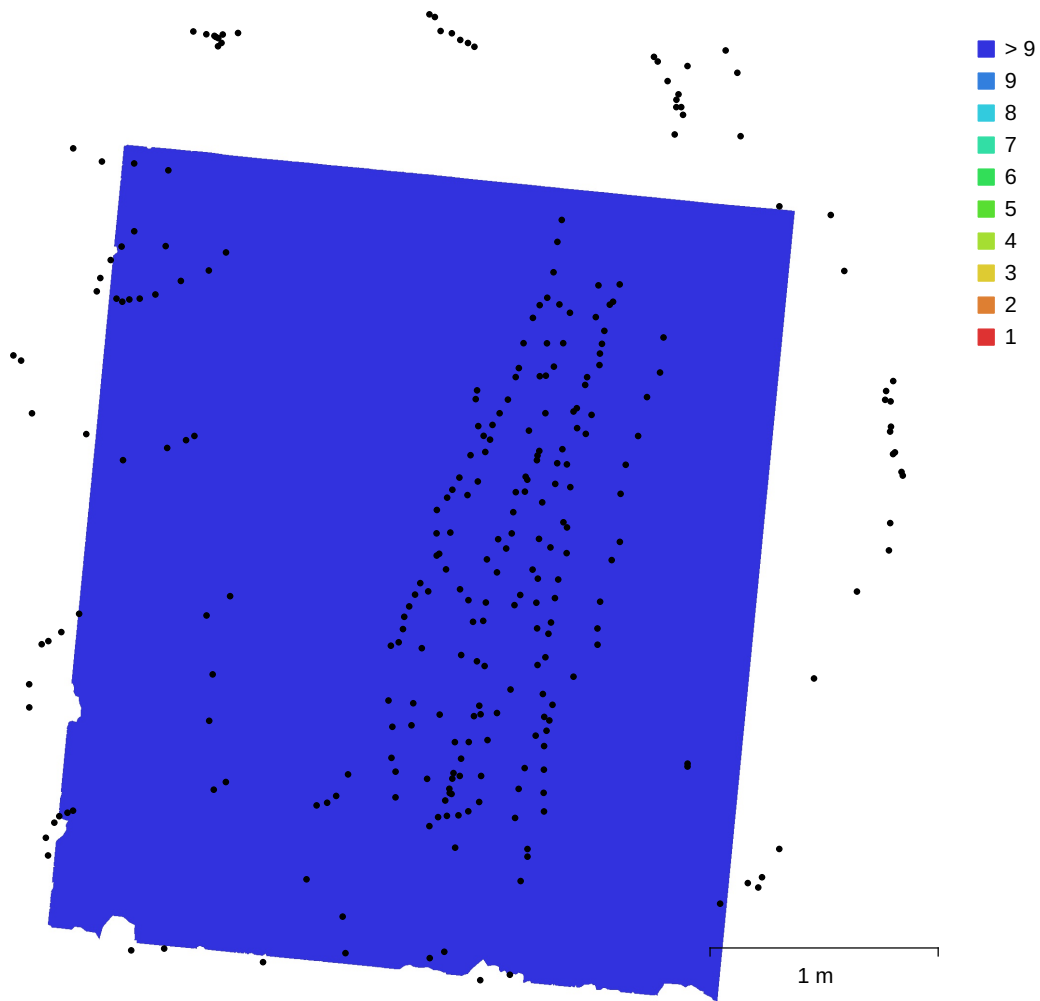


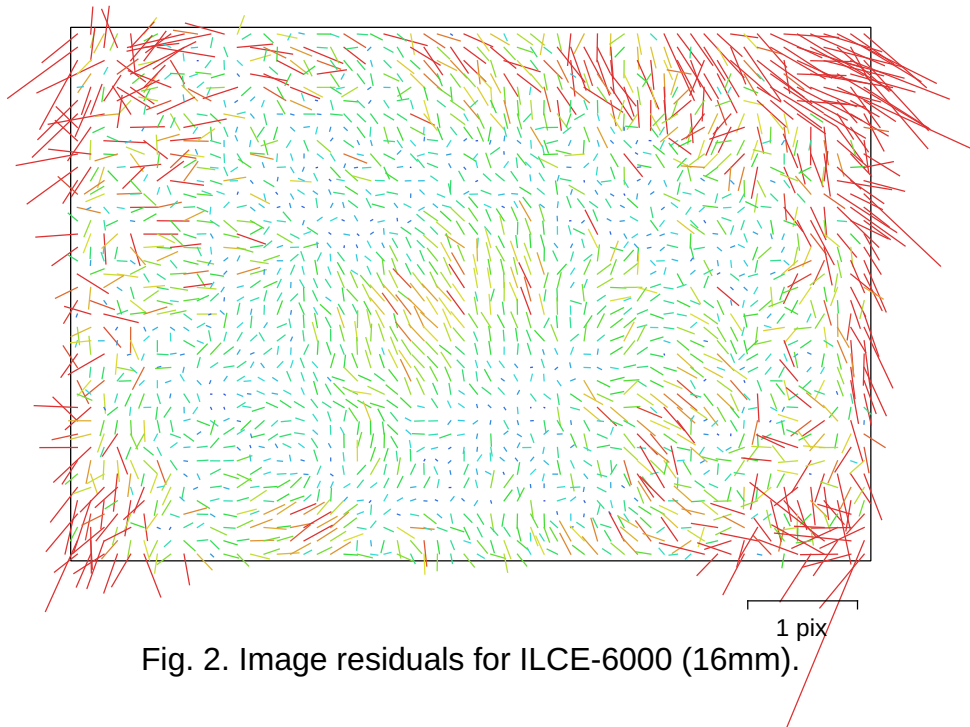
Fig. 1. Camera locations and image overlap.

Number of images:	280	Camera stations:	280
Flying altitude:	1.24 m	Tie points:	323,647
Ground resolution:	0.272 mm/pix	Projections:	985,816
Coverage area:	10.2 m ²	Reprojection error:	1.3 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
ILCE-6000 (16mm)	6000 x 4000	16 mm	4 x 4 μm	No

Table 1. Cameras.

Camera Calibration



ILCE-6000 (16mm)

280 images

Type	Resolution	Focal Length	Pixel Size
Frame	6000 x 4000	16 mm	4 x 4 μm

	Value	Error	F	Cx	Cy	B1	B2	K1	K2	K3	K4	P1	P2
F	4076.51	0.29	1.00	-0.02	-0.45	-0.38	-0.00	-0.06	0.15	-0.14	0.13	-0.01	-0.24
Cx	-71.9314	0.17		1.00	-0.12	-0.01	0.04	0.01	-0.01	0.02	-0.02	0.88	-0.11
Cy	-24.9756	0.18			1.00	0.14	0.00	-0.07	0.01	-0.01	0.00	-0.10	0.78
B1	0.721201	0.1				1.00	0.03	-0.03	-0.00	0.00	-0.01	-0.03	0.16
B2	8.77949	0.096					1.00	-0.01	0.01	-0.01	0.01	-0.04	-0.01
K1	-0.0102544	0.00022						1.00	-0.95	0.90	-0.84	0.00	-0.09
K2	-0.00515855	0.0011							1.00	-0.98	0.95	-0.00	0.01
K3	0.0385979	0.0024								1.00	-0.99	0.00	-0.00
K4	-0.0294555	0.0017									1.00	-0.00	0.00
P1	-0.00131718	1.3e-05										1.00	-0.07
P2	0.00145253	1.3e-05											1.00

Table 2. Calibration coefficients and correlation matrix.

Ground Control Points

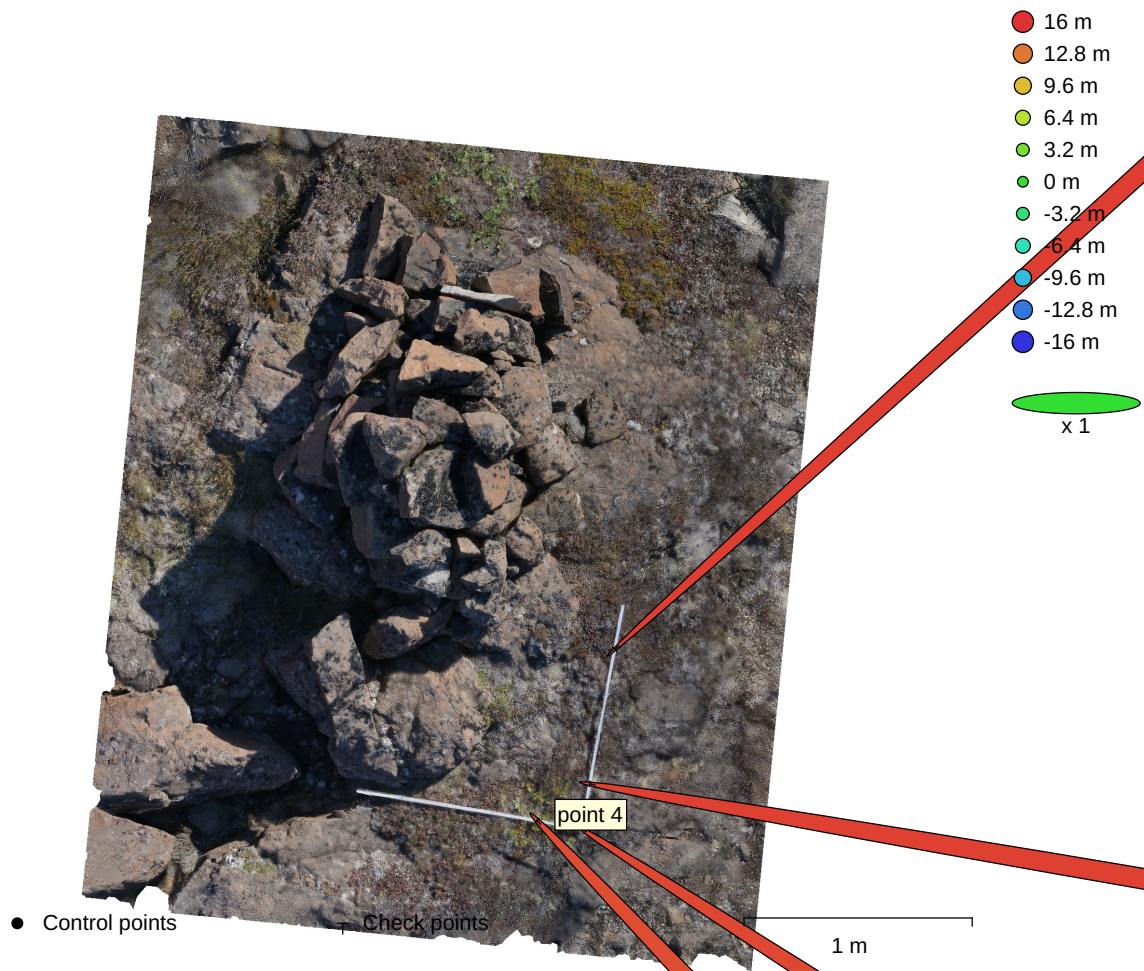


Fig. 3. GCP locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.
 Estimated GCP locations are marked with a dot or crossing.

Count	X error (m)	Y error (m)	Z error (m)	XY error (m)	Total (m)
4	5.58994	4.06211	15.1319	6.91	16.635

Table 3. Check points RMSE.

Label	X error (m)	Y error (m)	Z error (m)	Total (m)	Image (pix)
point 1	-5.82574	0.998129	15.3279	16.4281	4.355 (79)
point 2	-7.27955	-6.59656	15.4359	18.2968	7.414 (94)
point 3	-5.43811	3.48755	15.0165	16.3472	3.038 (61)
point 4	-2.91303	3.05434	14.7373	15.3298	4.077 (74)
Total	5.58994	4.06211	15.1319	16.635	5.240

Table 4. Check points.

Scale Bars

Label	Distance (m)	Error (m)
point 1_point 2	0.600025	2.49544e-05
point 3_point 4	0.199925	-7.48942e-05
Total		5.58205e-05

Table 5. Control scale bars.

Digital Elevation Model

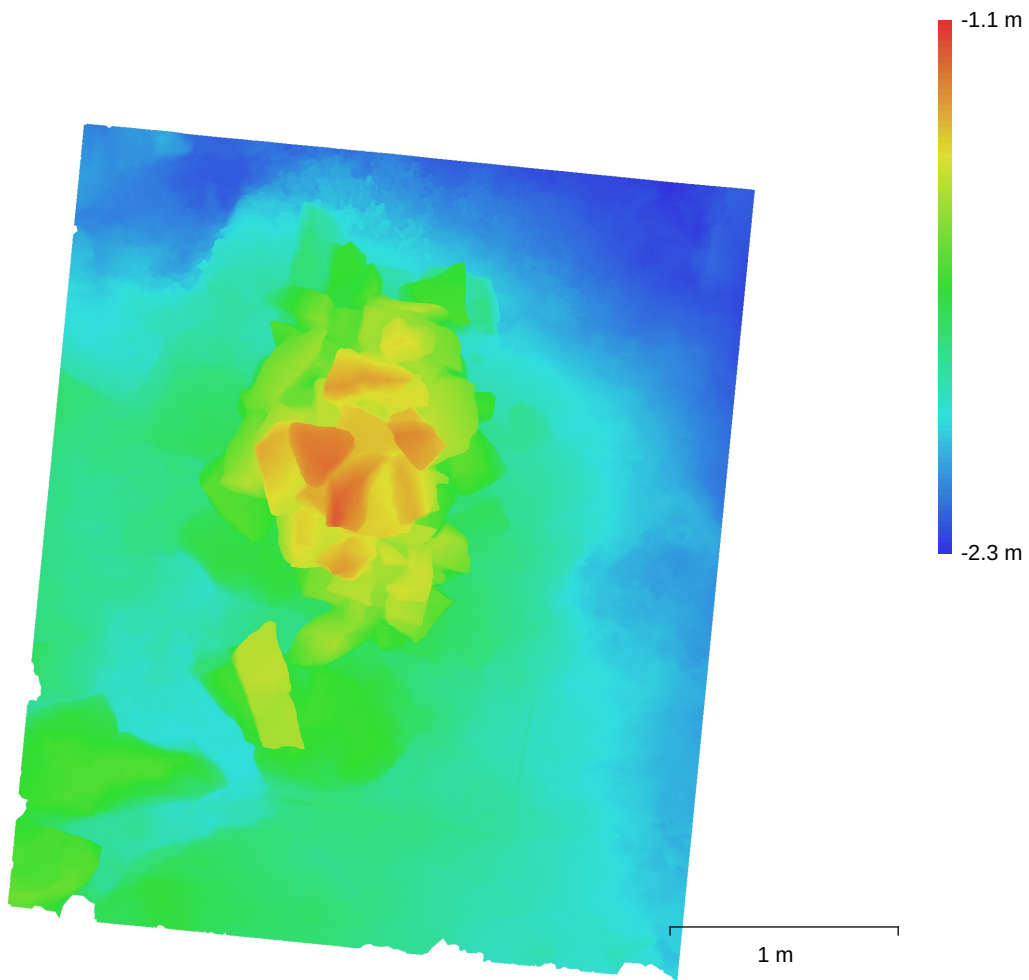


Fig. 4. Reconstructed digital elevation model.

Resolution: 0.972 mm/pix
Point density: 1.06 points/mm²

Processing Parameters

General

Cameras	280
Aligned cameras	280
Markers	4
Scale bars	2
Coordinate system	Local Coordinates (m)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	323,647 of 1,529,487
RMS reprojection error	0.473944 (1.29852 pix)
Max reprojection error	12.5608 (31.7431 pix)
Mean key point size	2.8722 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	4.77208

Alignment parameters

Accuracy	High
Generic preselection	Yes
Key point limit	60,000
Tie point limit	0
Filter points by mask	Yes
Mask tie points	No
Adaptive camera model fitting	No
Matching time	28 minutes 38 seconds
Alignment time	7 minutes 53 seconds

Optimization parameters

Parameters	f, b1, b2, cx, cy, k1-k4, p1, p2
Adaptive camera model fitting	No
Optimization time	6 seconds
File size	123.19 MB

Depth Maps

Count	280
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Depth maps generation parameters

Quality	High
Filtering mode	Aggressive
Processing time	1 hours 32 minutes
Memory usage	11.22 GB
Software version	1.7.1.11797
File size	1.95 GB

Dense Point Cloud

Points	43,633,223
Point colors	3 bands, uint8

Depth maps generation parameters

Quality	High
Filtering mode	Aggressive
Processing time	1 hours 32 minutes
Memory usage	11.22 GB

Dense cloud generation parameters

Processing time	1 hours 41 minutes
Memory usage	19.04 GB
Software version	1.7.1.11797

File size	1.44 GB
Model	
Faces	9,237,211
Vertices	4,623,123
Vertex colors	3 bands, uint8
Texture	4,096 x 4,096, 4 bands, uint8
Depth maps generation parameters	
Quality	High
Filtering mode	Aggressive
Processing time	1 hours 32 minutes
Memory usage	11.22 GB
Reconstruction parameters	
Surface type	Arbitrary
Source data	Depth maps
Interpolation	Enabled
Strict volumetric masks	No
Processing time	32 minutes 50 seconds
Memory usage	12.22 GB
Texturing parameters	
Mapping mode	Generic
Blending mode	Mosaic
Texture size	4,096
Enable hole filling	Yes
Enable ghosting filter	Yes
UV mapping time	3 minutes 50 seconds
UV mapping memory usage	4.73 GB
Blending time	12 minutes 18 seconds
Blending memory usage	6.67 GB
Software version	1.7.1.11797
File size	423.61 MB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.1 build 11797
OS	Linux 64 bit
RAM	125.62 GB
CPU	Intel(R) Core(TM) i7-9800X CPU @ 3.80GHz
GPU(s)	Quadro P1000